

Amendments to the Specification

Please amend the paragraph beginning at line 33 of page 4 to read as follows:

~~FIG. 6~~ FIGS. 6A and 6B ~~is a~~ [[are]] schematic diagram~~[[s]]~~ of the controller shown in block format in FIG. 3;

Please amend the paragraph beginning at line 3 of page 5 to read as follows:

Referring now to the drawings and especially to FIG. 1, more specifically a movable barrier door operator, or garage door operator is generally shown therein and referred to by numeral 10 includes a head unit 12 mounted within a garage 14. A barrier moving activating receiver 80 (shown in FIG. 2) includes a routine for responding to rolling access codes. The access code routine, when used with other routines and apparatus of the system, is capable of properly learning and responding to received access codes. An access code learning device of the receiver 80 (shown in FIG. 2) enables an access code learning mode of operation. When the access code learning mode is entered and a rolling access code is first received and learned, the rolling access routine is executed to control the opener and to learn new rolling access codes. More specifically, the head unit 12 is mounted to the ceiling of the garage 14 and includes a rail 18 extending therefrom with a releasable trolley 20 attached having an arm 22 extending to a multiple paneled garage door 24 positioned for movement along a pair of door rails 26 and 28. The system includes a hand-held transmitter unit 30 adapted to send signals to an antenna 32 positioned on the head unit 12 and coupled to the receiver 80 (shown in FIG. 2) as will appear hereinafter, and a learning transmitter 31. In this description the transmitter 30, which is the transmitter already known to the operator, is called the original transmitter, and the transmitter 31 is called the learning transmitter. An external control pad 34 is positioned on the outside of the garage having a plurality of buttons thereon and communicate via radio frequency transmission with an antenna 32 of the head unit 12. A switch module 39 is mounted on a wall of the garage. The switch module 39 is connected to the head unit 12 by a pair of wires 39a. The switch module 39 includes a light switch 39b, a lock switch 39c and a command switch 39d. An optical emitter 42 is connected

via a power and signal line 44 to the head unit 12. An optical detector 46 is connected via a wire 48 to the head unit 12.

Please amend the paragraph beginning at line 25 of page 6 to read as follows:

The garage door operator 10 with the head unit 12 is shown in FIG. 3. It has a controller 70 and antenna 32. The controller 70 includes a power supply 72 which receives alternating current from an alternating current source, such as 110 volt AC, and converts the alternating current to required levels of DC voltage. The controller 70 also includes a super-regenerative receiver 80 (shown in FIG. 5) coupled via a line 82 (shown in FIG. 6A) to supply demodulated digital signals to a microcontroller 84. The receiver 80 is energized by the power supply 72. The microcontroller is also coupled by a bus 86 to a non-volatile memory 88, which non-volatile memory stores user codes, and other digital data related to the operation of the control unit. An obstacle detector 90, which comprises the emitter 42 and infrared detector 46 is coupled via an obstacle detector bus 92 to the microcontroller. The obstacle detector bus 92 includes lines 44 and 48. The wall switch 39 is connected via the connecting wires 39a to the microcontroller 84. The microcontroller 84, in response to switch closures and received codes, will send signals over a relay logic line 102 to a relay logic module 104 connected to an alternating current motor 106 having a power take-off shaft 108 coupled to the transmission 18 of the garage door operator 10. A tachometer 110 is coupled to the shaft 108 and provides an RPM signal on a tachometer line 112 to the microcontroller 84; the tachometer signal being indicative of the speed of rotation of the motor. The apparatus also includes up limit switches 93a and down limit switches 93b, which respectively sense when the door 24 is fully open or fully closed. The limit switches are shown in FIG. 3 as a functional box 93 connected to microcontroller 84 by leads 95.

Please amend the paragraph beginning at line 31 of page 8 to read as follows:

In a step 510, the next highest power of 3 is subtracted from the rolling code and a test is made in a step 512 to determine if the result is equal to zero. If it is,

the next most significant digit of the binary rolling code is incremented in a step 514, following which flow is returned to the step 510. If the result is not greater than 0, the next highest power of 3 is added to the rolling code in the step 516. In the step 518, another highest power of 3 is incremented and in a step 520, a test is determined as to whether the rolling code is completed. If it is not, control is transferred back to step 510. If it has, control is transferred to step 522 to clear the bit counter. In a step 524, the blank timer is tested to determine whether it is active or not. If it is not, a test is made in a step 526 to determine whether the blank time has expired. If the blank time has not expired, control is transferred to a step 528 in which the bit counter is incremented, following which control is transferred back to the decision step 524. If the blank time has expired as measured in decision step 526, the blank timer is stopped in a step 530 and the bit counter is incremented in a step 532. The bit counter is then tested for odd or even in a step 534. If the bit counter is not even, control is transferred to a step 536 where the bit of the fixed code bit counter divided by 2 is output. If the bit counter is even, the rolling code bit counter divided by 2 is output in a step 538. By the operation of 534, 536 and 538, the rolling code bits and fixed code bits are alternately transmitted. The bit counter is tested to determine whether it is set to equal to 80 in a step 540. If it is, the blank timer is started in a step 542. If it is not, the bit counter is tested for whether it is equal to 40 in a step 544. If it is, the blank timer is tested and is started in a step 544-[[543]]. If the bit counter is not equal to 40, control is transferred back to step 522.

Please amend the paragraph beginning at line 5 of page 10 to read as follows:

As shown in ~~Fig. 6~~ FIGS. 6A and 6B, microcontroller pin P31 is connected to tachometer 110 via conductor 112. When motor 106 is turning, pulses having a time separation proportional to motor speed are sent on conductor 112. The pulses on conductor 112 are repeatedly scanned by microcontroller 85 to identify if the motor 106 is rotating and, if so, how fast the rotation is occurring.